



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/706,885	11/12/2003	Takao Kuromiya	MAT-8482US	7373
23122	7590	03/23/2006	EXAMINER	
RATNERPRESTIA P O BOX 980 VALLEY FORGE, PA 19482-0980			KOCHE, GEORGE R	
			ART UNIT	PAPER NUMBER
			1734	

DATE MAILED: 03/23/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/706,885	KUROMIYA, TAKAO	
	Examiner	Art Unit	
	George R. Koch III	1734	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) Responsive to communication(s) filed on 03 January 2006.

2a) This action is FINAL. 2b) This action is non-final.

3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4) Claim(s) 1,2,5-7 and 10 is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5) Claim(s) _____ is/are allowed.

6) Claim(s) 1,2,5-7 and 10 is/are rejected.

7) Claim(s) _____ is/are objected to.

8) Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9) The specification is objected to by the Examiner.

10) The drawing(s) filed on _____ is/are: a) accepted or b) objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a) All b) Some * c) None of:

- Certified copies of the priority documents have been received.
- Certified copies of the priority documents have been received in Application No. _____.
- Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) Notice of References Cited (PTO-892)

2) Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____.

4) Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.

5) Notice of Informal Patent Application (PTO-152)

6) Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1-2 are rejected under 35 U.S.C. 102(b) as being anticipated by Hattori (JP09-225990).

Hattori discloses an extrusion type nozzle comprising: a block (see Figure 2) having therein a manifold for distributing liquid along a coating width, a slit (item 6) for allowing said liquid distributed in said manifold to pass therethrough, and a discharge outlet for discharging said liquid from said slit, said slit including a first portion considered to be disposed in the manifold and a second portion provided closer to said discharge outlet than said first portion, the first portion having an adjustable gap;

and a first forming member forming the gap along a wall of said first portion of said slit;

a displacing mechanism (items 19, 20) couple to said first forming member (item 15) for changing the gap of the first portion of the slit, a length of said first forming member varies along a width of said first forming member (i.e., called an inclined slit), said length in a direction of discharging said liquid; The ability to set the tilting elements (items 17) to separate distances is what permits tilting of the first forming

member along the coating width. Hattori discloses that the clearances can be adjusted to uniformize the flow path resistance.

As to claim 2, the forming member of Hattori (item 15) is moveable, and thus exchangeable.

Claim Rejections - 35 USC § 103

3. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.
4. Claim 1 is rejected under 35 U.S.C. 103(a) as being unpatentable over JP4-363167 and JP 10005660 A (cited in the IDS filed 11/12/2003).

JP4-363167 discloses an extrusion type nozzle comprising a block (items 1A) having a manifold for distributing liquid along a coating width (see Figure 1 for the width), a slit (defined as the gap between items 1A on one side and 1A and 1B on the other) for allowing the liquid distribute in the manifold to pass therethrough, and a discharge outlet (item 3) for discharging the liquid from the slit, the slit including a first portion disposed in the manifold and a second portion provided closer to said discharge outlet than the first portion (both slits are visible in Figure 4), the first portion of the slit having an adjustable gap, and a first forming member (item 1B) forming the gap along a wall of the first portion of the slit, the first forming member being displaceable to change a gap of the first portion of the slit. JP4-363137 discloses a displacing mechanism (items 5) which is capable of tilting, and therefore is coupled to, the first forming

member along the coating width. The ability to set the tilting elements (items 4 and 5) to separate distances is what permits tilting of the first forming member along the coating width.

JP4-363167 does not disclose that a length of the first forming member varies along a width of the first forming member, said length in a direction of discharging said liquid.

JP 10005660 A discloses that a length of the first forming member (taper block 14) varies along a width of the first forming member, said length in a direction of discharging said liquid (see solution). JP 10005660 A discloses that the taper block's shape can be used to ensure that the coating quantity in a lateral direction can be uniformized, i.e. adjusted (see solution). Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to have utilized such a variable length first forming member in order to adjust the coating quantity.

5. Claims 1-2 and 5-7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ulcej (US Patent 6,206,680 B1) and JP 10005660 A.

Ulcej discloses, in the prior art section, an extrusion type nozzle comprising a block (items 12B and 12) having a manifold for distributing liquid along a coating width (the portion of the gap between the blocks "above" members 22 and 24, relative to the outlet), a slit (defined as the gap between items 12 on one side and 12B on the other)

for allowing the liquid distribute in the manifold to pass therethrough, and a discharge outlet (visible in Figure 1) for discharging the liquid from the slit, the slit including a first portion disposed in the manifold and a second portion provided closer to said discharge outlet than the first portion (both slits are visible in Figure 1, especially the thicker slit which is at the location of 35), the first portion of the slit having an adjustable gap, and a first forming member (item 22) for forming a wall of the first portion of the slit, the first forming member being displaceable to change a gap of the first portion of the slit. Ulcej discloses a displacing mechanism (items 32) which is capable of tilting, and therefore is coupled to, the first forming member along the coating width. The ability to set the tilting elements (items 4 and 5) to separate distances is what permits tilting of the first forming member along the coating width.

Ulcej does not disclose that a length of the first forming member varies along a width of the first forming member, said length in a direction of discharging said liquid.

JP 10005660 A discloses that a length of the first forming member (taper block 14) varies along a width of the first forming member, said length in a direction of discharging said liquid (see solution). JP 10005660 A discloses that the taper block's shape can be used to ensure that the coating quantity in a lateral direction can be uniformized, i.e. adjusted (see solution). Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to have utilized such a variable length first forming member in order to adjust the coating quantity.

As to claim 2, the forming member of Ulcej (item 22) is moveable, and thus exchangeable.

As to claim 5, Ulcej discloses a that the slit further includes a third portion (the upper portion relative to the outlet) closer to the manifold than the first portion, the nozzle further comprising a second forming member (item 24) for forming a a wall of the third portion of the slit. This second forming member is moveable, and thus exchangeable.

As to claim 6, Ulcej discloses a second forming member (item 24) which forms a wall of the manifold, the second forming member capable of being displaceable to change an area of a cross section of the manifold perpendicular to the coating width.

As to claim 7, Ulcej discloses a second displacing mechanism (the second item 32) which is capable of tilting the second forming member along the coating width.

6. Claims 1-2 and 5-7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ulcej (US Patent 6,206,680 B1) and Hattori (JP 09-225990).

Ulcej discloses, in the prior art section, an extrusion type nozzle comprising a block (items 12B and 12) having a manifold for distributing liquid along a coating width (the portion of the gap between the blocks “above” members 22 and 24, relative to the outlet), a slit (defined as the gap between items 12 on one side and 12B on the other) for allowing the liquid distribute in the manifold to pass therethrough, and a discharge outlet (visible in Figure 1) for discharging the liquid from the slit, the slit including a first portion and a second portion provided closer to said discharge outlet than the first portion (both slits are visible in Figure 1, especially the thicker slit which is at the

location of 35), the first portion of the slit having an adjustable gap, and a first forming member (item 22) for forming a wall of the first portion of the slit, the first forming member being displaceable to change a gap of the first portion of the slit.

Ulcej does not disclose that a length of the first forming member varies along a width of the first forming member, said length in a direction of discharging said liquid. Ulcej discloses screws which are considered capable of tilting said first forming member along said coating width, but is silent as to the tilting.

Hattori discloses a first forming member (item 15) being displaceable to change a gap of said first portion of said slit, that the length of said first forming member varies along a width of said first forming member (i.e., called an inclined slit), said length in a direction of discharging said liquid; and a displacing mechanism for tilting said first forming member along said coating width. Hattori discloses that the displacing member and slotted forming member can be used to adjust and correct for the flow characteristics of the extrusion (see solution). Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to have utilized such a variable length first forming member and displacing member in order to adjust and control the coating quantity via the flow path resistance.

The ability to set the tilting elements (items 17) to separate distances is what permits tilting of the first forming member along the coating width. Hattori discloses that the clearances can be adjusted to uniformize the flow path resistance.

As to claim 2, the forming member of both Ulcej (item 22) and especially Hattori (item 15) are moveable, and thus exchangeable.

As to claim 5, Ulcej discloses a that the slit further includes a third portion (the upper portion relative to the outlet) closer to the manifold than the first portion, the nozzle further comprising a second forming member (item 24) for forming a wall of the third portion of the slit. This second forming member is moveable, and thus exchangeable. In any event, Hattori discloses that the forming members are moveable in order to control the flow characteristics.

As to claim 6, Ulcej discloses a second forming member (item 24) which forms a wall of the manifold, the second forming member capable of being displaceable to change an area of a cross section of the manifold perpendicular to the coating width. Furthermore, Hattori discloses that the forming members are moveable in order to control the flow characteristics.

As to claim 7, Ulcej discloses a second displacing mechanism (the second item 32) which is capable of tilting the second forming member along the coating width. Furthermore, Hattori discloses that the forming members are moveable in order to control the flow characteristics.

7. Claim 10 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kamikihara (US Patent 6,344,088) in view of Ulcej (US 6,206,680) and JP 10005660 A.

Kamikihara discloses a coating apparatus comprising an extrusion type nozzle (item 18, Figure 21) with forming members (item 16 and attached structures), a measuring unit (item 38) for measuring the thickness, and a controller for controlling the amount of displacement of a moving member (item 16) according to the measured value (item 36, and see columns 13-15).

Kamikihara discloses that the extrusion type nozzle uses a moving member to merely adjusts the outlet and does not use a nozzle with a forming member to change the cross section of the manifold.

Ulcej discloses, in the prior art section, an extrusion type nozzle comprising a block (items 12B and 12) having a manifold for distributing liquid along a coating width (the portion of the gap between the blocks “above” members 22 and 24, relative to the outlet), a slit (defined as the gap between items 12 on one side and 12B on the other) for allowing the liquid distribute in the manifold to pass therethrough, and a discharge outlet (visible in Figure 1) for discharging the liquid from the slit, the slit including a first portion disposed in the manifold and a second portion provided closer to said discharge outlet than the first portion (both slits are visible in Figure 1, especially the thicker slit which is at the location of 35), and a first forming member (item 22) for forming a wall of the first portion of the slit, the first portion of the slit having an adjustable gap, the first forming member being displaceable to change a gap of the first portion of the slit. Ulcej discloses a displacing mechanism (items 32) which is capable of tilting, and therefore is coupled to, the first forming member along the coating width. The ability to set the tilting elements (items 4 and 5) to separate distances is what permits tilting of the first forming

member along the coating width. Ulcej discloses that the forming members are necessary to influence the flow to obtain a product at the die exit having desirable qualities (see column 1, lines 13-16). Therefore, it would have been obvious to one of ordinary skill in the art to have utilized forming members as in Ulcej's prior art section in order to influence the flow to obtain a product at the die exit having desirable qualities.

Neither Kamikihara nor Ulcej disclose that a length of the first forming member varies along a width of the first forming member, said length in a direction of discharging said liquid.

JP 10005660 A discloses that a length of the first forming member (taper block 14) varies along a width of the first forming member, said length in a direction of discharging said liquid (see solution). JP 10005660 A discloses that the taper block's shape can be used to ensure that the coating quantity in a lateral direction can be uniformized, i.e. adjusted (see solution). Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to have utilized such a variable length first forming member in order to adjust the coating quantity.

8. Claim 10 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kamikihara (US Patent 6,344,088) in view of Ulcej (US 6,206,680) and Hattori (JP 09-225990).

Kamikihara discloses a coating apparatus comprising an extrusion type nozzle (item 18, Figure 21) with forming members (item 16 and attached structures), a measuring unit (item 38) for measuring the thickness, and a controller for controlling the

amount of displacement of a moving member (item 16) according to the measured value (item 36, and see columns 13-15).

Kamikihara discloses that the extrusion type nozzle uses a moving member to merely adjusts the outlet and does not use a nozzle with a forming member to change the cross section of the manifold.

Ulcej discloses, in the prior art section, an extrusion type nozzle comprising a block (items 12B and 12) having a manifold for distributing liquid along a coating width (the portion of the gap between the blocks “above” members 22 and 24, relative to the outlet), a slit (defined as the gap between items 12 on one side and 12B on the other) for allowing the liquid distribute in the manifold to pass therethrough, and a discharge outlet (visible in Figure 1) for discharging the liquid from the slit, the slit including a first portion and a second portion provided closer to said discharge outlet than the first portion (both slits are visible in Figure 1, especially the thicker slit which is at the location of 35), and a first forming member (item 22) for forming a wall of the first portion of the slit, the first forming member being displaceable to change a gap of the first portion of the slit. Ulcej discloses a displacing mechanism (items 32) which is considered capable of tilting the first forming member along the coating width, although not explicitly disclosing so. Ulcej discloses that the forming members are necessary to influence the flow to obtain a product at the die exit having desirable qualities (see column 1, lines 13-16). Therefore, it would have been obvious to one of ordinary skill in the art to have utilized forming members as in Ulcej’s prior art section in order to influence the flow to obtain a product at the die exit having desirable qualities.

Neither Kamikihara nor Ulcej disclose that a length of the first forming member varies along a width of the first forming member, said length in a direction of discharging said liquid. Ulcej discloses screws which are considered to be displacing mechanisms capable of tilting said first forming member along said coating width, but is silent as to the tilting.

Hattori discloses a first forming member (item 15) being displaceable to change a gap of said first portion of said slit, that the length of said first forming member varies along a width of said first forming member (i.e., called an inclined slit), said length in a direction of discharging said liquid; and a displacing mechanism for tilting said first forming member along said coating width. Hattori discloses that the displacing member and slotted forming member can be used to adjust and correct for the flow characteristics of the extrusion (see solution). Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to have utilized such a variable length first forming member and displacing member in order to adjust and control the coating quantity via the flow path resistance.

Response to Arguments

9. Applicant's arguments filed 1/03/2006 have been fully considered but they are not persuasive.

10. With respect to applicants arguments concerning Hattori, Hattori does disclose an adjustable gap (via items 19-22) - this die is disclosed as being movable in the abstract and therefore discloses the claimed details.

11. In response to applicant's argument that the various references do not disclose that slit has a manifold, it appears applicant is using a narrower definition. A manifold is considered to be a distribution pathway to an outlet - and the distribution pathways and outlets of all of the references qualify.

Conclusion

12. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to George R. Koch III whose telephone number is (571) 272-1230 (TDD only). If the applicant cannot make a direct TDD-to-TDD call, the

applicant can communicate by calling the Federal Relay Service at 1-866-377-8642 and giving the operator the above TDD number. The examiner can normally be reached on M-F 9-5.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Christopher Fiorilla can be reached on (571) 272-1187. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



George R. Koch III
Primary Examiner
Art Unit 1734

GRK
3/20/2006